Nevada and California Bureau of Land Management
Greater Sage-Grouse Habitat Management Area Considerations

In the 2024 Draft Resource Management Plan Amendment (RMPA)/Environmental Impact Statement (EIS) Appendix 3 (p. 3-10 through 3-13), the BLM describes the U.S. Geological Survey (USGS) science-based modeling process that has informed the greater sage-grouse (GRSG) habitat management area (HMA) delineation process for multiple agencies in Nevada and California since 2015. The model is informed by the following: GRSG resource selection information informed by telemetry locations from radio-marked birds; the relationship of those telemetry points with associated habitat characteristics such as land cover composition, water resources, habitat configuration, elevation, and topography (each at multiple spatial scales related to the observed GRSG movement patterns); and a space use index based on GRSG breeding densities at leks. The modeled combination of these habitat characteristics and site use resulted in a model output of potential management prioritization scenarios (e.g., Priority, General and Other Habitat Management Area categories). The strength of using this model to identify the HMAs is that it can be updated as new data become available.

In late 2022, the BLM worked with the USGS and other state, local, and federal partners to begin updating the prior version of the HMA model from 2016. The model update was to incorporate new data and information related to habitat selection and space use and ultimately inform changes to the HMAs in Nevada and California. Unfortunately, the final updated version of the USGS HMA model was not published in time for inclusion in the BLM's 2024 Draft RMPA/EIS. However, USGS provided BLM with draft results of the model for use in preparing the Draft EIS range of alternatives and impact analyses. The results that BLM used for the 2024 Draft RMPA/EIS include more than six years of additional field data collected since the last published version (Coates et al., 2016), as well as advances in methodology to produce the updated HMA model (Milligan et al. 2024). This ensured that the BLM was using the best science available at the time the Draft RMPA/EIS was being prepared.

The 2024 Draft RMPA/EIS Appendix 3 noted the final USGS model, maps, and documentation would likely become available sometime during the spring of 2024. The USGS published the results of the modeling effort on March 22, 2024. That document is available for public review/download at the following USGS site: https://doi.org/10.3133/ofr20241018. Additionally, the public may download the GIS data associated with the published model at the following USGS site: https://doi.org/10.5066/P933VE6W.

The 2024 Draft RMPA/EIS (Appendix 3, page 3-12) disclosed the BLM's intent to incorporate the final published version into the Proposed RMPA/Final EIS. It also noted that there would likely be differences in the HMAs between the Draft RMPA/EIS version of the model and the final published version as model input data were updated and modeling approaches refined. The

USGS publication Appendix 3 includes a description of the USGS's review and revision process for the current modeling update. It outlines the key suggestions received from modeling effort partners and how those changed the version of the model that the BLM used in the 2024 Draft RMPA/EIS, resulting in the model output that the USGS ultimately published.

This document compares the BLM's 2024 Draft RMPA/EIS alternatives for Nevada and California HMA delineations and those of the published USGS model. The BLM is providing this document to facilitate public review of the published USGS maps/data and to invite public input on their potential use in the Proposed RMPA/Final EIS, as described in the Draft RMPA/EIS.

The following pages includes comparisons between the published USGS map and the various BLM Draft EIS alternatives, including a table comparing acreages and maps depicting the differences.

Finally, it is important to note that the GRSG 2015 Approved Resource Management Plan Amendment (ARMPA) includes Management Decision SSS 17, which states that BLM will update habitat management areas based on current science and data "to represent the most up-to-date spatial representation of GRSG habitat categories." Updating the spatial representation of HMA categories using the USGS 2024 publication is consistent with the 2015 ARMPA direction. Management Decision SSS 17 has not been changed through maintenance or amendments to the ARMPA and is not being considered for change in the current planning process. As such, considering the published USGS modeling results conforms with existing RMP management actions, as well as being compliant with the policy directing the BLM to use the best available science in its decision-making process.

Updating the Draft RMPA/EIS with the USGS published data would result in some areas becoming HMA that were not analyzed as such in the Draft RMPA/EIS. This is limited to 41,936 acres of PHMA (or 0.24% of the HMA identified on BLM-administered lands), 233,840 acres of GHMA (1.35%), and 1,142,018 acres of OHMA (6.58%). These changes reflect consideration and application of new GRSG information based on data received since publication of the Draft RMPA/EIS.

This following table shows the total acres of HMA for each alternative in the Draft RMPA/EIS compared with the acres in the USGS published data. The top three rows of HMA acres are inclusive of all lands, regardless of ownership. The bottom three rows of HMA acres are limited to the BLM-administered lands – where the decisions in the current plan amendment process would be applicable.

Habitat Management Area (HMA)	BLM 2024 Greater Sage Grouse Draft EIS					USGS Published Data
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5/6	
Acres on All Lands (NV and CA)						
PHMA	12,816,409	12,813,438	32,003,615	14,139,770	13,938,481	13,820,446
GHMA	9,413,611	9,413,160	N/A	12,579,503	9,888,344	4,791,294
OHMA	7,246,050	7,246,238	N/A	5,284,343	3,904,134	7,031,173
Acres on BLM-Administered Lands* (NV and CA)						
PHMA	9,266,000	9,268,000	21,138,000	9,780,000	9,661,000	9,608,892
GHMA	5,783,000	5,749,000	N/A	7,551,000	6,183,000	2,898,660
OHMA	4,862,000	4,870,000	N/A	3,806,000	2,977,000	4,853,822
Note: * - Acreages presented in this table may vary from what is in the BLM's 2024 Draft EIS due to different calculation methods, rounding strategies, and other GIS processes.						

The remainder of this document presents figures and tables that compare the spatial distribution and HMA acerage on BLM-administered lands as provided in the Draft RMPA/EIS and those provided by the USGS published data. The figures are consistently color coded to display where the two datasets are in agreement (overlap), where changes occur between the HMA types, and areas where HMA is gained (new areas as HMA) or reduced (areas no longer considered HMA). The tables associated with each map provide the acres associated with the comparison.

Reading across the rows of the table compares how areas with a given HMA type in the Draft RMPA/EIS align with the USGS Published data. Alternatively, reading down the columns compares how the USGS Published data is aligns with the HMAs in the Draft RMPA/EIS. The bottom row represents HMA acres that are included in the USGS Published data but not the Draft RMPA/EIS (new areas as HMA). The far right column represents HMA acres included in the Draft RMPA/EIS that are not identified as HMA in the USGS Published data (areas no longer considered HMA).

Example of changes to the Draft RMPA/EIS HMA categorization by the USGS Published data (reading across rows)					
		USGS Published Habitat Management Areas			
		PHMA	**GHMA**	**OHMA**	**No HMA (HMA acres reduced)**
BLM GRSG DEIS Alternative 1 HMAs	**PHMA**	No Change	PHMA to GHMA	PHMA to OHMA	PHMA lost
	GHMA	GHMA to PHMA	No Change	GHMA to OHMA	GHMA lost
	OHMA	OHMA to PHMA	OHMA to GHMA	No Change	OHMA lost
	No HMA (HMA acres added)	PHMA gained	GHMA gained	OHMA gained	

Differences between Draft RMPA/EIS Alternative 1 and USGS published HMA Data

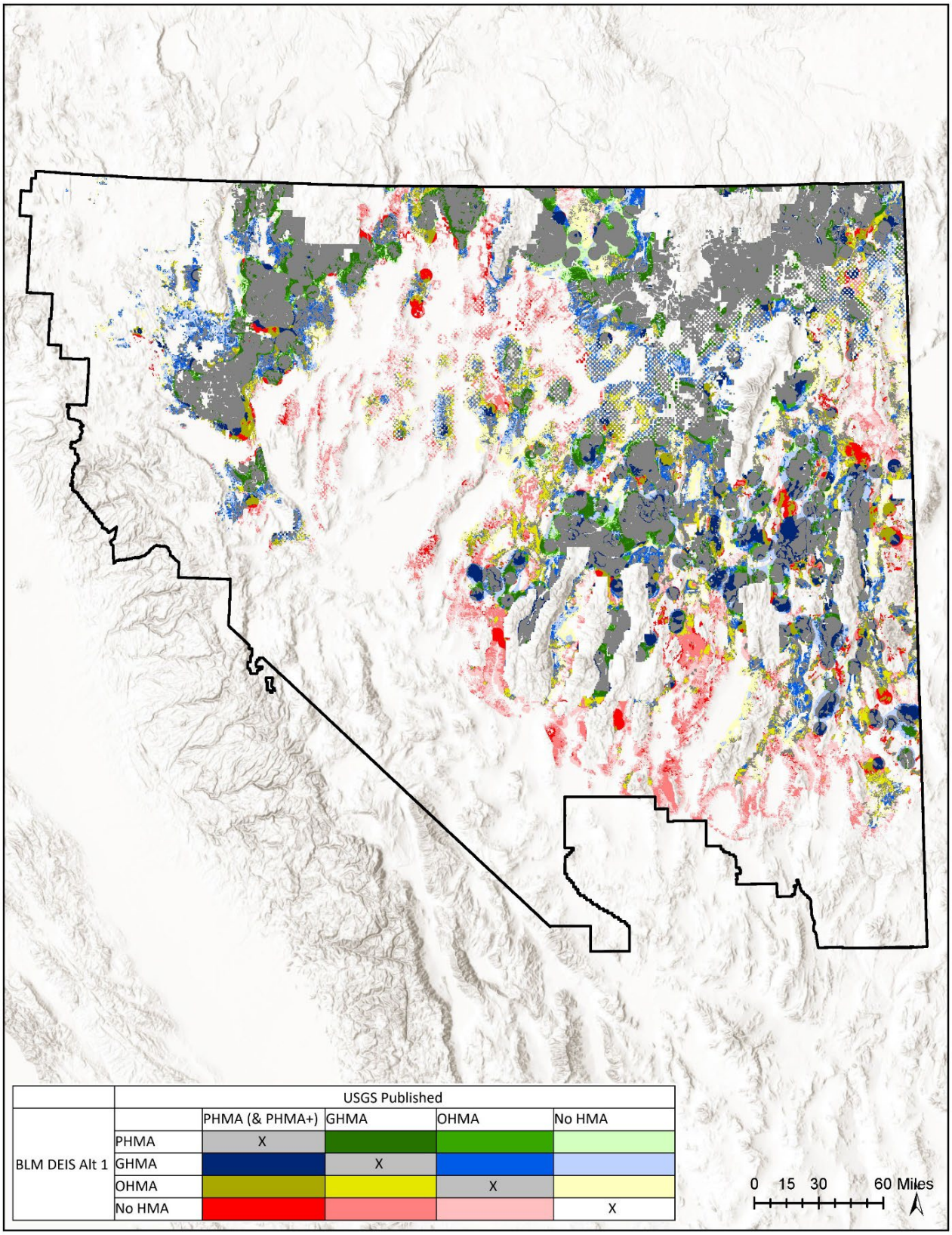

Table 1: Comparison of BLM-Administered acres identified in the Draft RMPA/EIS Alternative 1 HMA map and the USGS Published HMA.

		USGS Published Habitat Management Areas			
		PHMA	**GHMA**	**OHMA**	**No HMA (HMA acres reduced)**
BLM GRSG DEIS Alternative 1 HMAs	**PHMA**	7,553,405	500,338	507,872	704,046
	GHMA	1,214,865	1,203,106	1,223,485	2,140,823
	OHMA	433,942	432,347	1,135,652	2,860,634
	No HMA (HMA acres added)	438,378	766,162	1,981,284	
Note: * - Acreages presented in this table may vary from what is in the BLM's 2024 Draft EIS due to different calculation methods, rounding strategies, and other GIS processes.					

Differences between Draft RMPA/EIS Alternative 2 and USGS published HMA Data

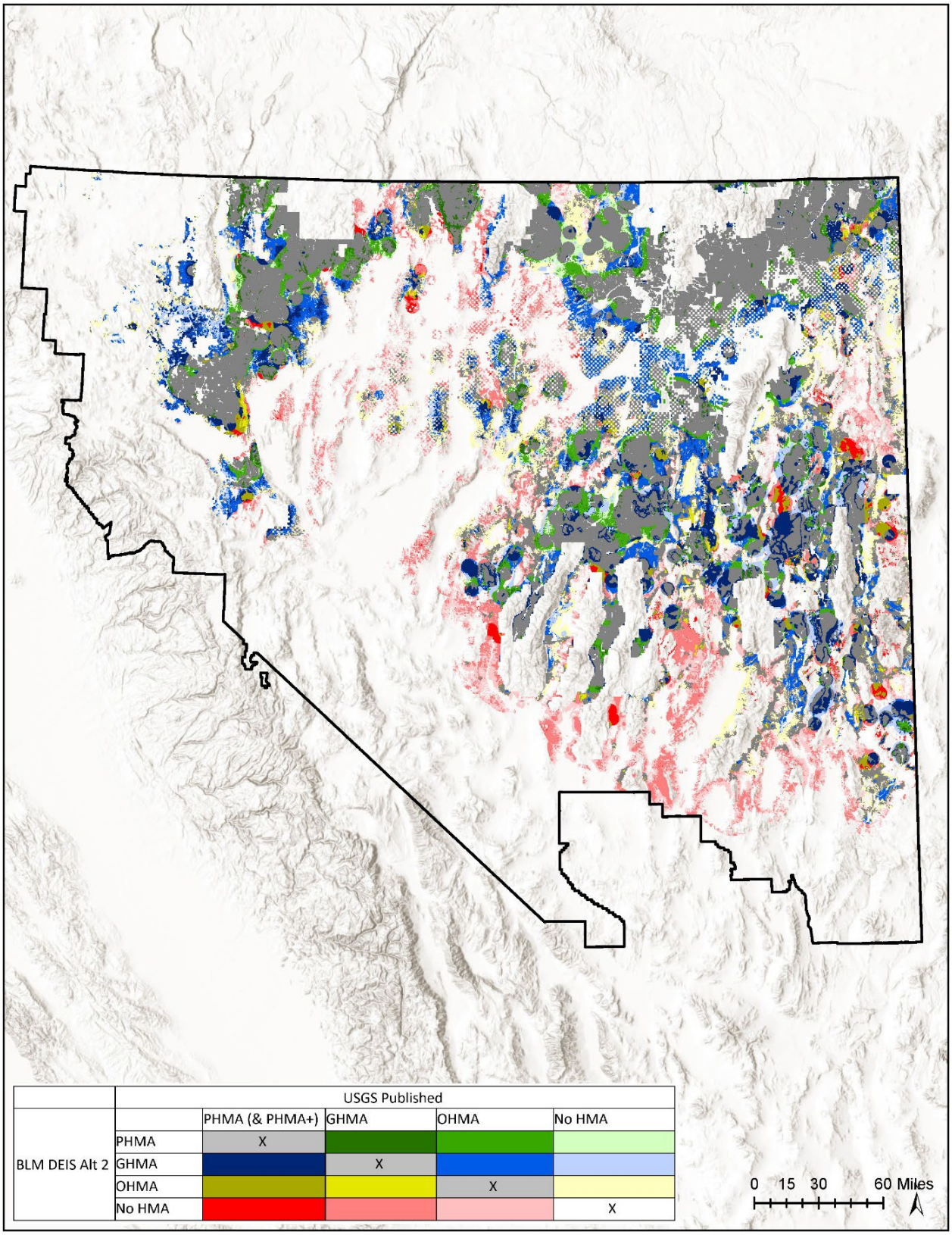

Table 2: Comparison of BLM-Administered acres identified in the Draft RMPA/EIS Alternative 2 HMA map and the USGS Published HMA.

		USGS Published Habitat Management Areas			
		PHMA	**GHMA**	**OHMA**	**No HMA (HMA acres reduced)**
BLM GRSG DEIS Alternative 2 HMAs	**PHMA**	7,551,973	500,232	507,665	703,752
	GHMA	1,214,740	1,202,925	1,223,285	2,140,622
	OHMA	433,953	432,262	1,135,430	2,860,128
	No HMA (HMA acres added)	443,400	768,053	1,985,296	
Note: * - Acreages presented in this table may vary from what is in the BLM's 2024 Draft EIS due to different calculation methods, rounding strategies, and other GIS processes.					

Differences between Draft RMPA/EIS Alternative 3 and USGS published HMA Data

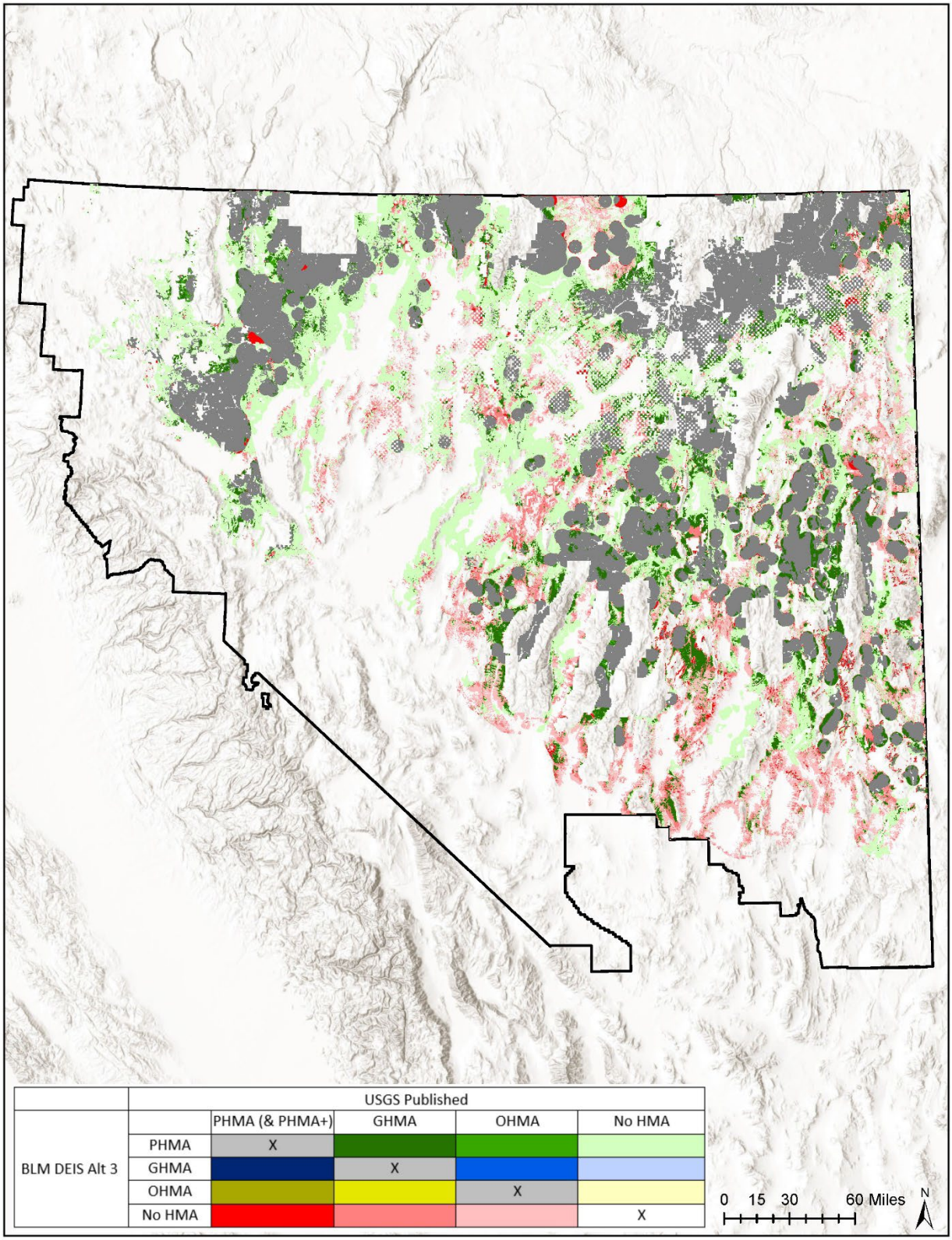

Table 3: Comparison of BLM-Administered acres identified in the Draft RMPA/EIS Alternative 3 HMA map and the USGS Published HMA.

BLM-Administered Lands Acres Overlap between BLM 2024 GRSG DEIS Alternative 3 HMAs and USGS Published HMAs*					
		USGS Published Habitat Management Areas			
		PHMA	**GHMA**	**OHMA**	**No HMA (HMA acres reduced)**
BLM GRSG DEIS Alternative 3 HMAs	**PHMA**	9,567,755	2,534,141	3,247,054	5,782,588
	GHMA	n/a	n/a	n/a	n/a
	OHMA	n/a	n/a	n/a	n/a
	No HMA (HMA acres added)	76,310	369,330	1,604,623	
Note: * - Acreages presented in this table may vary from what is in the BLM's 2024 Draft EIS due to different calculation methods, rounding strategies, and other GIS processes.					

Differences between Draft RMPA/EIS Alternative 4 and USGS published HMA Data

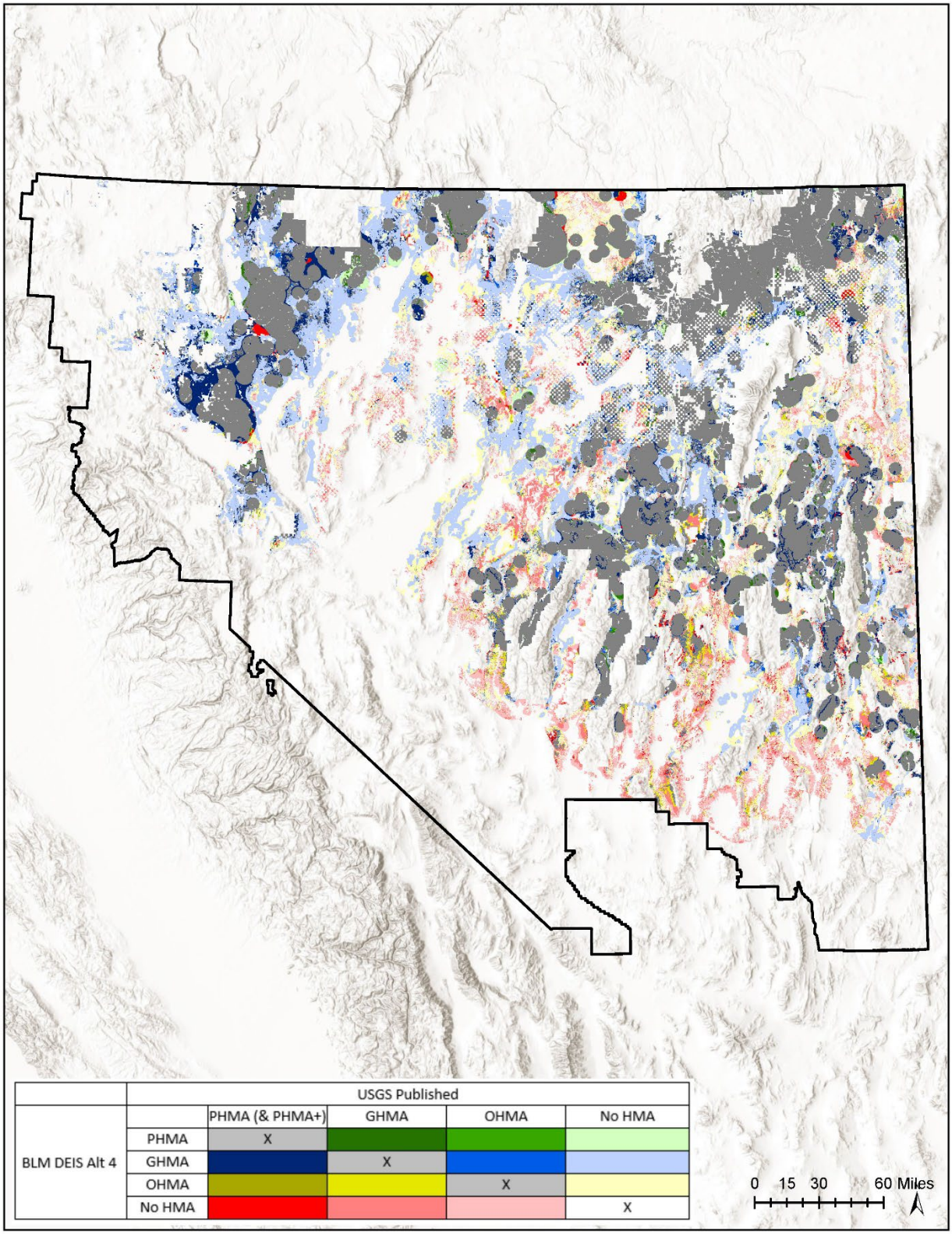

Table 4: Comparison of BLM-Administered acres identified in the Draft RMPA/EIS Alternative 4 HMA map and the USGS Published HMA.

BLM-Administered Lands Acres Overlap between BLM 2024 GRSG DEIS Alternative 4 HMAs and USGS Published HMAs*					
		USGS Published Habitat Management Areas			
		PHMA	**GHMA**	**OHMA**	**No HMA (HMA acres reduced)**
BLM GRSG DEIS Alternative 4 HMAs	**PHMA**	8,957,402	503,496	179,714	137,812
	GHMA	551,126	1,553,908	1,812,110	3,631,667
	OHMA	59,227	476,737	1,255,230	2,013,108
	No HMA (HMA acres added)	76,310	369,330	1,604,623	
Note: * - Acreages presented in this table may vary from what is in the BLM's 2024 Draft EIS due to different calculation methods, rounding strategies, and other GIS processes.					

Differences between Draft RMPA/EIS Alternatives 5/6 and USGS published HMA Data

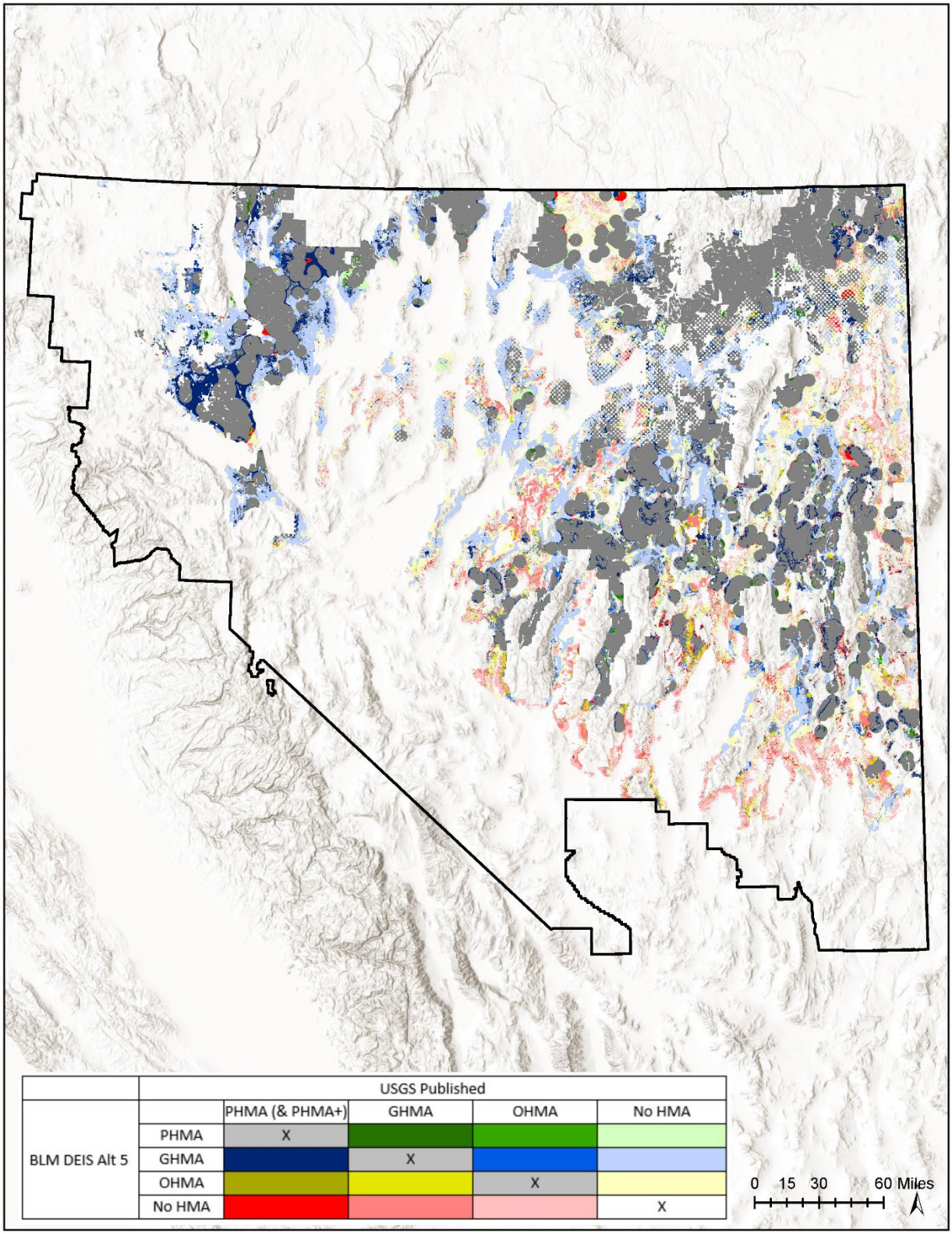

Table 5: Comparison of BLM-Administered acres identified in the Draft RMPA/EIS Alternatives 5/6 HMA map and the USGS Published HMA.

		USGS Published Habitat Management Areas			
		PHMA	**GHMA**	**OHMA**	**No HMA (HMA acres reduced)**
BLM GRSG DEIS Alternative 5/6 HMAs	**PHMA**	8,885,099	471,843	176,270	124,838
	GHMA	506,714	1,452,700	1,627,587	2,595,257
	OHMA	47,294	384,767	1,082,649	1,461,197
	No HMA (HMA acres added)	55,129	269,908	1,239,174	
Note: * - Acreages presented in this table may vary from what is in the BLM's 2024 Draft EIS due to different calculation methods, rounding strategies, and other GIS processes.					